

class steamers; 28th, river rising and full of floating ice. Cincinnati, 2nd, drift-wood and floating ice in river; 14th, canal frozen over, shore ice forming along river; 18th, small quantities of soft ice in river; 19th, some ice in river but not enough to obstruct boats; 20th, considerable ice in river, boats found difficulty in forcing their way through it; 21st, heavy floating ice in river; 22nd, 23rd, small quantities of floating ice. *Tennessee River*—Chattanooga, 2nd, thick ice in river. *Miami River*—Cincinnati, 14th, floating ice in river. *Licking River*—Cincinnati, 14th, floating ice in river. *Alleghany River*—Pittsburg, 15th, 26th, 27th, 28th, large quantities of floating ice in river. *Monongahela River*—Morgantown, West Va., 16th, large quantities of floating ice in river. Pittsburg, 26th, 27th, 28th, floating ice in river. *Susquehanna River*—Catawissa, Pa., north branch closed during the month, ice eight to ten inch thick. *Delaware River*—Trenton, N. J., ice in river broken up, having been closed for 46 days; 15th, river frozen again. *Hudson River*—Garrisons, N. Y., 28th, river still closed with ice. *New Jersey Coast*—Long Branch, 11th, the vast field of ice which has filled the "Horseshoe" for over a month has been moving away gradually for the past two days. Last night the remaining portion, containing many thousand acres, moved slowly out with the tide. *Flushing Bay*—Flushing, N. Y., 13th, bay open, tug boat passed through with cargo of coal; 15th, bay closed; 26th, reopened by a channel being sawed through the ice, tug boat arrived with coal; 28th, another boat arrived with coal. *Deerfield River*—Rowe, Mass., 12th, ice passed out. *Ottawa River*—Woodstock, Vt., 12th, breaking up; 13th, river clear. *Lake Superior*—Duluth, 1st to 5th, harbor frozen over, and also lake as far as the eye can reach, average thickness fourteen inches; Marquette, 5th, ice in harbor. *Lake Michigan*—Grand Haven, 26th, lake frozen as far as the eye can reach, though the Milwaukee boats still keep a channel through it. *Grand Traverse Bay*—Northport, Mich., bay all open outside of harbor. *Grand River*—Grand Haven, Mich., river still full of floating ice. *Lake Geneva*—Bloomfield, Wis., 4th, ice twenty-five inches thick. *St. Clair River*—Port Huron, Mich., 13th, ice so thick that the Grand Trunk R. R. Co. are compelled to blast it by exploding sunken torpedoes, in order to make a passage for their ferry boats. *Detroit River*—Detroit, 2nd, ice along the shore. *Lake Erie*—Cleveland, 1st, large floes of floating ice moved toward the shore by the prevailing N.W. winds; 2nd, floating ice as far as the eye can reach; 4th, lake covered with floating ice; 8th, lake frozen out to a great distance, very thick near shore; 11th, ice firm on lake; 12th, ice breaking up; 15th, lake frozen; 17th, ice still firm; 18th, lake covered with ice; 22nd, ice breaking up. *Sandusky Bay*—Sandusky, 28th, ice in middle of bay twenty inches thick, loaded wagons and sleds crossed over to the Peninsula and Johnson's Island. *Lake Champlain*—West Charlotte, Vt., 1st, lake frozen over; 2nd, crossing on the ice; 4th, ice boats crossed; 10th, lake open near Four Brothers' Islands; 12th, open from Hillsboro Point, N. Y., to Hill Point, Vt., and north to the Islands; 15th, lake closed, people crossing; 16th, teams crossed for first time; 25th, cutting ice twelve inches thick. *Mt. Desert Sound*—Mt. Desert, Me., 1st, frozen over.

High Tides.—Cape Lookout, N. C., 8th, 19th.

TEMPERATURE OF WATER.

The *temperatures of water*, as observed in rivers and harbors, with average depth when observations were taken, are given in table on chart No. II. At Alpena, Buffalo, Burlington, Cleveland, Escanaba, Grand Haven, Sandusky and Toledo no observations were made on account of ice. At the following stations observations were only made on the dates indicated: Chicago, 1st, 13th, 17th to 25th, 28th; Detroit, 1st; Duluth, 1st to 5th; Marquette, 1st to 4th; Milwaukee, 8th to 17th; New York City, 6th to 13th, 20th, 21st and 26th.

ATMOSPHERIC ELECTRICITY.

Thunder-storms.—7th, Fla. 8th, Fla. 9th, Miss. 10th, Mo., Miss., La., Tex. 11th, Fla., W. Va., Ga., N. C. 14th, Idaho. 16th, Tex. 17th, Fla., Ala., La., Ga. 18th, Ala., Ga., La., N. C., Fla., S. C. 22nd, Ala., Ind., La., Miss., Tex., Mo., Ill., Tenn., Ky. 23rd, Fla., Miss., Tex., Ala. 25th, Ill., Ind., Tenn., Miss., La. 26th, Miss., Tex., Va. and Conn.

Auroras.—Monticello, Iowa, 22nd; Topeka, Kan., 2nd; Mechanic's Falls, Me., 13th; Cambridge, Mass., regularly looked for each evening at 8 p. m., except the 10th, but none seen; observations hindered by clouds on the 3rd, 5th, 6th, 11th, 16th to 20th, 22nd, 23rd, 25th, 26th; partially cloudy in the north, 1st, 13th, 27th; moonlight, 1st, 2nd, 4th, 7th, 8th, 27th, 28th; evenings on which the aurora might have been seen, if present, 9th, 12th, 14th, 15th, 21st, 24th; Atco, N. J., 28th; Cape Vincent, N. Y., regularly looked for each evening at 8 p. m., but none observed; Pembina, Dak., 11th, 14th; Coalville, Utah, 13th.

OPTICAL PHENOMENA.

Solar Halos.—1st, Iowa, Me., Ind. Ty. 2d, Iowa, Fla., Conn. 3d, Iowa, Me., Neb., Pa., Utah, Dak. 4th, Ind., Mich., Pa., Dak., Ohio, Ga. 5th, Ill., Iowa, Me., Mass., N. H., N. Y., Dak. 6th, Conn., Me. 7th, Conn., Me., Tex., Dak., Tenn. 8th, Kan., Utah, Dak., Tex., Min., N. M. 9th, Ind., Iowa, Mich., Miss., Ohio, N. C., Ga. 10th, Ill., Ind., Mich., Miss., N. J., N. Y., Ohio, Pa., Tex., Iowa, Dak., Ga. N. C., Va. 11th, Iowa, Me., Dak. 12th, Kan., Iowa, Neb., Dak., Minn., Ga. 13th, Ill., Iowa, Mich., Minn., Ga. 14th, Ill., Ind., Iowa, Miss., Neb., Tex., Dak. 15th, Ind., Iowa, Ill. 16th, Conn., Ia., N. J., N. Y., Pa., Ohio, Va. 17th, Me., Mich., N. Y., Vt., Dak. 18th, Mich., N. Y. 19th, Ill., Iowa, N. Y., Dak., Minn., Ga. 20th, Utah, Ohio, Ga. 21st, Neb., N. H., Nev., Iowa. 22d, Conn., Me., Miss., N. H., N. Y., Utah, Tex., Iowa, Ohio. 23d, Ill., Kan., Mass., Neb., N. H., Tenn., Dak., Iowa, N. C., Me. 24th, Ind., Mich. N. H., Ohio, Dak., Ga. 25th, Iowa, Neb., N. H., Dak., Ohio, Ga. 26th, Ill., Iowa, Neb., Tenn., Tex. 27th, Iowa, Ohio, Va., Neb., Tex., Tenn., Ga., Conn. 28th, Ill., Ind., Iowa, Mich., Ohio, Va., Dak., Tex., Tenn.

Lunar Halos.—1st, Me., Mich., N. H., N. J., N. Y., Pa., Vt., Va., Wis., N. M., La., Dak., Minn., Tenn., Conn., R. I. 2d, Ala., Ill., Ind., Me., Mass., Mich., Miss., Neb., N. J., Ohio, Idaho, N. M., Dak., Mo., Wis., Fla., Ga., R. I. 3d, Conn., Ill., Ind., Ia., Miss., Neb., N. J., N. Y., Cal., Ind. Ty., Dak., Tex., La., Mo., Wis., Ohio, Fla., Va. N. H. 4th, Neb., N. J., N. Y., N., C., Pa., Va., Col., Kan., Dak., Wis., Ohio, Ga., Md., Conn., Mass., N. H., R. I. Me. 5th, Ia., Me., Neb., Pa., Va., Wis., Idaho, Ind. Ty., N. C. 6th, Ohio, Vt., Idaho, Tex., Wis., N. H., Me. 7th, Ia., Me., Cal., Col., Tex., Dak., N. M., Ohio, Va., N. H. 8th, Ind., Mo., Dak., Tex., Wis., N. M., Ohio, Ky., Tenn., Vt. 9th, Ill., Ohio, Tenn., Va., Dak., Ia., Mo., N. Y. 10th, Ind., Mich., Ohio, Tenn., Va., Dak. 11th, Kan., Neb., Dak. 12th, N. M. 14th, Mo., N. Y., Tex. 15th, Ind. 23d, Vt. 24th, Pa., Nev. 25th, Mo., Nev., Col., Ga. 26th, Ia., Mo., Neb., Va., Cal., Col., Tex. 27th, Ind., Mass., Neb., N. H., N. J., N. Y., Ohio, Pa., Va., Cal., Col., Tex., Tenn. 28th, Mich., N. Y., Ohio, Pa., Va., W. Va.

Mirage.—New London, Conn., 24th; Pembina, Dak., 15th.

MISCELLANEOUS PHENOMENA.

BOTANICAL.—*Alabama*—Green Springs, in bloom, 1st, red maple, 20th, plums, 28th, peaches; 20th, quinces in leaf. *California*—Sacramento, in bloom, 16th, almond trees, 23rd, apricots, 28th, peaches and other fruit trees in bloom. Visalia, in bloom, 22nd, almond trees, 24th, peach. The past winter is considered to have been the severest on record throughout California, and the San Francisco Bulletin of February 13th, gives a very complete review by counties, of the reports of the owners of orange, lemon, lime and citron plantations. The uniform report is that in low valleys, and at a few extreme high elevations, the cold has been so severe as to injure or kill these trees, but that the vast majority of the plantations having been located on hillsides of moderate elevations, have not suffered seriously, and that the cultivation especially of orange and lemon is hereafter to be considered as no longer an experiment in California. The lowest temperatures recorded by thermometers were frequently not so destructive as the frosts that occurred when higher temperatures prevailed. Frequently severe winds intensified the injury due to low temperatures. *Florida*—Ft. Barrancas, in bloom, 2nd, peaches. Houston, in bloom, 10th, roses, 19th, wild plums, 21st, peaches; 13th, farmers finished sowing oats; 25th, planting corn. *Georgia*—Forsyth, in bloom, 25th, peaches. St. Marys, in bloom, 10th, strawberries, 20th, peaches. Augusta, 15th, peach trees beginning to bloom; 24th, English peas up, and lettuce in the market. *Indiana*—St. Meinrad, 27th, peaches mostly killed; grass and wheat green and promising. *Iowa*—Ft. Madison 8th, horse-radish sprouting. *Kansas*—Cresswell, 18th, peach buds and trees killed. *Louisiana*—Okalooska, in bloom, 27th, plums and violets; 28th, peaches beginning to bloom, all vegetation ten to fifteen days later than last year. *Michigan*—Litchfield, 28th, peaches not killed, fair prospect for all kinds of fruit. *Mississippi*—Brookhaven, in bloom, 1st, yellow jessamine, 17th, maple, 18th, plums; 20th, peach buds swelling; 12th, crab-apple leafing. Fayette, in bloom, 21st, pears, 22nd, chinese quince, wild violets, slippery elm; 24th, wild plum and pitch pine. *Missouri*—Corning, 28th winter wheat in fine condition. Springfield, 28th rhubarb sprouting in the open air, blue grass and clover green, buds of early foliage bursting. Throughout the state complaints of injury to the peach crop are quite general. *Nebraska*—Clear Creek, 28th, farmers breaking and raking corn stalks preparatory to seeding. Howard, 28th, peach buds appear to be killed. *North Carolina*—Fayetteville, in bloom, 1st, japonicas and jonquils, 11th, hyacinths, 17th, flowering maple, 23rd, apricot; 11th, wheat crop fine, fruit of all kinds so far uninjured. *Ohio*—Bethel, 25th, maple sap running. *South Carolina*—Aiken, in bloom, 24th, peaches and plums. *Tennessee*—McMinnville, in bloom 16th, jonquils, lilacs budding. Chattanooga, in bloom, 21st, violets and crocus, 24th, forsythia. *Texas*—Melissa, 28th, ground too dry for oats to sprout, wheat needing rain very much. Austin, 28th, in bloom, peach and plums. Terrill, 20th, commenced planting corn. Gatesville, in bloom 22nd, peach and elm, grass growing. *Virginia*—Broad Oak, 28th, wheat and oats looking badly.

BIRDS.—*Martins*—Houston, Fla., 12th. *Blackbirds*—Dover Mines, Va., 22nd; Geneva, Neb., 22nd. *Geese*—Ft. Madison, Iowa, 11th, 24th; Oregon, Mo., 22nd, 23rd, 24th; Corning, Mo., 1st to 23th; Kansas City, Mo., 4th, 7th, 21st; Plattsmouth, Neb., 4th, 9th, 10th; Flushing, N. Y., 15th; Bethel, Ohio, 25th; Ringgold, Ohio, 25th; North Lewisburg, Ohio, 28th; Jacksonburg, Ohio, 28th; Melissa, Tex., 2nd, 18th; Dover Mines, Va., 23rd, 26th; Howard, Neb., 23rd; Sacramento, Cal., 4th, 7th, 16th; North Platte, Neb., 28th; Leavenworth, 22nd, large flocks; St. Marks, Fla., 22nd; Keokuk, 23rd; Lynchburg, Va., 7th. *Robins*—Topeka, Kan., 23rd; Sandy Springs, Md., 28th; Plattsmouth, Neb., 4th, (24th, in large numbers;) Flushing, N. Y., 16th, first appearance; Bellefontaine, Ohio, 2nd; Jacksonburg, Ohio, 25th; Ringgold, Ohio, 24th, 28th, in large numbers; Broad Oak, Va., 28th; Chattanooga, Tenn., 27th. *Woodpeckers*—Monticello, Iowa, 2nd, 15th, 24th. *Owls*—Monticello, Iowa, 1st, 6th; Uvalde, Tex., 16th. *Chickadees*—Monticello, Iowa, 9th, 20th, 23rd. *Prairie Chickens*—Corning, Mo., 1st to 28th. *Ducks*—Corning, Mo., 1st to 28th; Beloit, Wis., 28th. *Bluejays*—Rowe, Mass., 22nd, 25th; Niles, Mich., 3rd, 5th; Oregon, Mo., 3rd, 6th. *Wax Wings*—Rowe, Mass., 1st, 2nd, 4th, 7th, 13th, 17th, 22nd. *Bluebirds*—Somerset, Mass., 16th; Oregon, Mo., 3rd, 6th; Jacksonburg, Ohio, 5th; Melissa, Tex., 18th; Broad Oak, Va., 28th. *Hawks*—Corning, Mo., 1st to 28th. *Crows*—Corning, Mo., 1st to 28th; Linden, N. J., 10th, 28th; Princeton, N. J., 9th, 10th; Jacksonburg, Ohio, 28th. *Sparrows*—Bellefontaine, Ohio, 28th; Augusta, Ga., 27th. *Mocking Birds*—Melissa, Tex., 24th; Fayette, Miss., 28th. *Cedar Birds*—Dover Mines, Va., 15th to 28th. *Redbird*—Oregon, Mo., 1st, 9th, 16th, 20th; Melissa, Tex., 22nd. *Meadow Larks*—Fallston, Md., 23rd.

MISCELLANEOUS.—*Frogs piping*—Louisville, Ill., 24th; Weldon, N. C., 11th, 25th. *Mosquitos*—Weldon, N. C., 25th. *Locusts*—Creswell, Kan., 23d. *Butterflies*—Fayette, Miss., 19th, 21st, 22d. *Bees*—Anna, Ill., 3d; St. Meinrad, Ind., 27th, young bees; Afton, Iowa, 21st; Litchfield, Mich., many swarms killed by the severe cold; Oregon, Mo., 2d, 3d, 7th, 21st; North Lewisburg, Ohio, 25th.